IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Busche et al.**	§	Group Art Unit: **3622**
	§	
Serial No.: **09/400,583**	§	Examiner: **Kemper, Melanie A.**
	§	
Filed: **September 22, 1999**	§	Attorney Docket No.: **CR9-99-049**
	§	

For: **Method and System for Integrating Spatial Analysis and Data Mining Analysis to Ascertain Favorable Positioning of Products in a Retail Environment**

35525

PATENT TRADEMARK OFFICE
CUSTOMER NUMBER

TRANSMITTAL DOCUMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:
ENCLOSED HEREWITH:

- Appellant's Brief (in triplicate) (37 C.F.R. 1.192); and
- Our return postcard.

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Respectfully submitted,

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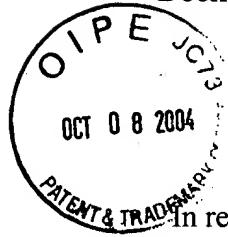
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Integrating Spatial Analysis and Data §
Mining Analysis to Ascertain
Favorable Positioning of Products in a
Retail Environment

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ATTENTION: Board of Patent Appeals
and Interferences
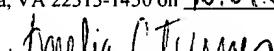
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APPELLANT'S BRIEF (37 C.F.R. 1.192)

This brief is in furtherance of the Notice of Appeal, filed in this case on August 4, 2004.

The fees required under § 1.17(c), and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief is transmitted in triplicate. (37 C.F.R. 1.192(a))

REAL PARTIES IN INTEREST

The real party in interest in this appeal is the following party: International Business Machines Corporation.

RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 39, 41-44, 53, and 55-58.

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims canceled: 1-38, 40, 45-52, and 54.
2. Claims withdrawn from consideration but not canceled: NONE
3. Claims pending: 39, 41-44, 53, and 55-58.
4. Claims allowed: NONE
5. Claims rejected: 39, 41-44, 53, and 55-58.

C. CLAIMS ON APPEAL

The claims on appeal are: 39, 41-44, 53, and 55-58.

STATUS OF AMENDMENTS

There are no amendments after the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

Applicants' claims describe a method and system for determining relationships of data associated with product placement in a retail space.

Independent claim 39 describes generating data relationships using data mining techniques. The data relationships associate individual customers with information related to the individual customers. Spatial relationships are generated using data mining techniques. The spatial relationships include relative placement of products within the retail space. These data relationships are then integrated with the spatial relationships to determine additional information concerning purchases by the customers. The spatial relationships further include associations of customer paths through the retail space with product placement within the retail space. [See specification, page 23, line 28 – page 24, line 21].

Independent claim 53 describes first generating means for generating data relationships using data mining techniques [See Figure 4]. The data relationships associate individual customers with information related to the individual customers. Second generating means are described for generating spatial relationships using data mining techniques [See Figure 4]. The spatial relationships include relative placement of products within the retail space. Means are described for integrating these data relationships with the spatial relationships to determine additional information concerning purchases by the customers [See Figures 4 & 5]. The spatial relationships further include associations of customer paths through the retail space with product placement within the retail space [See specification, page 23, line 28- page 24, line 21].

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Is the Examiner's rejection of claims 39, 41-44, 53, and 55-58 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,920,261 issued to *Hughes* in view of Toung, "Wal-Mart Stores, Inc. – Company Report" [hereinafter *Toung*] and Maclean's, "The Data Game" [hereinafter

Data Game] is well founded?

ARGUMENT

The Examiner's rejection of claims 39, 41-44, 53, and 55-58 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,920,261 issued to *Hughes* in view of Toung, "Wal-Mart Stores, Inc. – Company Report" [hereinafter *Toung*] and Maclean's, "The Data Game" [hereinafter *Data Game*] is not well founded.

Applicants' claims describe generating data relationships using data mining techniques. These data relationships associate individual customers with information related to the individual customers. Applicants' claims also describe integrating the data relationships with spatial relationships to determine additional information concerning purchases by the customers.

The Examiner states that *Toung* teaches generating customer data by associating customers with information related to each customer using data mining and associating the information with spatial relationships.

Toung teaches merely that data mining techniques are used to extract customer buying patterns that are then used to refine merchandise placements. *Toung* quite clearly describes collecting information about multiple customers and then using that information to target particular demographics. *Toung* even gives an example of how a particular group of customers act. Customers, as a group, are more likely to buy a travel alarm clock when that clock is located in the luggage department rather than in the jewelry department.

Toung does not teach generating data relationships that associate <u>individual</u> customers with information related to that <u>individual</u>. *Toung* teaches using data mining to determine buying patterns about shoppers in general, as a <u>group</u>. Nothing in *Toung* teaches data relationships that associate individual customers with information related to the individual customers.

Therefore, *Toung* does not supply the feature of data relationships that associate individual customers with information related to the individual customers that the Examiner appears to believe is missing from *Hughes*. Therefore, the combination of *Hughes*, *Toung*, and *Data Game* does not render Applicants' claims unpatentable. The combination does not describe, teach, or suggest all of the features of Applicants' claims.

In addition, *Toung* teaches merely that product placement can be modified. "Customer buying patterns", from *Toung*, refers not to a customer's movement patterns through the retail

space, but only to the types and patterns of purchases made by multiple customers. There is no teaching in *Toung* of customer paths through retail space.

It is respectfully submitted that *Hughes* must be modified in order to integrate the teachings of *Toung* and that such modification is not obvious. *Hughes* generally deals with the problem of monitoring and maintaining an accurate representation of all inventory in a retail space. The data mining of *Hughes* is not described or applied to generating spatial relationships using data mining techniques where the spatial relationships include associations of customer paths through retail space with product placement. In order to apply the teachings of data mining from *Tough* to *Hughes*, *Hughes* must be modified by applying the use of data mining to generating spatial relationships using data mining techniques where the spatial relationships include associations of customer paths through retail space with product placement. No such teaching is found in either reference. One of ordinary skill in the art would not have been motivated to make such a modification from the cited references.

Applicants' claims also describe generating spatial relationships using data mining techniques. These spatial relationships include relative placement of products within the retail space. The spatial relationships also include associations of customer paths through the retail space with product placement within the retail space.

The Examiner states that *Hughes* teaches associating spatial relationships with customer data to determine additional information concerning purchases by the customer at column 16, line 40 through column 17, line 50, column 18, lines 19-23, and column 20, lines 10-15 and 25-65.

Hughes teaches that a customer's path can be calculated at the point of purchase. The time each purchased product was moved is recorded. *Hughes* then attempts to reconstruct the customer's path by assuming that the customer went first to the location of the first moved item, next to the location of the next moved item, and so on. This teaching by *Hughes* does not read on Applicants' claims, however. Applicants' claim associating customer paths through the retail space with product placement. *Hughes* teaches calculating a customer's path using time of movement of an item. Associating a customer path with product placement is not the same as calculating a customer's path using time of movement of an item.

Further, nothing in *Hughes* teaches an affirmative action such as claimed by Applicants. Applicants claim an affirmative action of generating spatial relationships that include associations of customer paths with product placement. *Hughes* does not teach an affirmative action of

generating spatial relationships that include associations of customer paths with product placement.

In addition, *Hughes* teaches using data mining for measuring overall facility performance. *Hughes* does not teach using data mining to generate spatial relationships where the spatial relationships include relative placement of products and also include associations of customer paths through the space with product placement.

The Examiner states that *Hughes* teaches associating the locations of products with the paths of customers at column 16, line 40 through column 17, line 50, column 18, lines 19-23, and column 20, lines 10-15 and 25-65. As described above, *Hughes* teaches calculating a customer's path using time of movement of an item. *Hughes* does not teach an affirmative action of generating spatial relationships that include associations of customer paths with product placement.

The Examiner states that *Hughes* teaches employing data mining algorithms to generate input data for forming the set of spatial relationships at column 17, lines 5-20 and 30-45, and column 20, lines 10-15 and 25-60. The Examiner also states that *Hughes* teaches spatial analysis algorithms to form the set of spatial relationships at column 20, lines 40-50, column 19, lines 1-35, column 13, lines 25-45, and column 18, lines 15-40.

The data mining described by *Hughes* is used for measuring and analyzing overall facility performance. It is also used for determining which departments "are performing well and which are not with respect to a variety of performance measures. These measures could include total profit, profit per area, and so on." Column 17, lines 5-13. *Hughes* does not teach, however, generating spatial relationships using data mining techniques where the spatial relationships include relative placement of products within the retail space and associations of customer paths through the retail space with product placement within the retail space. The performance measures are not spatial relationships.

The Examiner states the *Data Game* teaches performing data mining in order to trace the exact route each customer has taken through the store. The Examiner states that *Data Game*, therefore, teaches generating spatial relationships including associating customer path and product placement. Applicants disagree. *Data Game*, however, does not teach using data mining to trace a customer's route through the store. *Data Game* teaches reconstructing customer behavior from cash register tapes. The route the customer took through the store is reconstructed based on what was purchased. *Data Game* does not describe how the route was reconstructed. *Data Game* does

not state that the route is reconstructed using product placement. Further, Applicants' independent claims describe associations of customer paths through the retail space with product placement. *Data Game* does not describe associating a path with product placement. *Data Game* teaches reconstructing a customer's route using the customer's cash register receipt and what the customer purchased. The identity of what a customer purchases is not the same thing as product placement in the retail space. The identity of what a customer purchases is merely that, a list of purchases. *Data Game* does not teach that the cash register receipt includes any information about where those products are located. Therefore, *Data Game* does not teach generating spatial relationships including associating customer path and product placement as the Examiner states.

The combination of *Hughes*, *Toung*, and *Data Game* does not describe, teach, or suggest Applicants' claims. The combination does not describe, teach, or suggest generating data relationships using data mining techniques where these data relationships associate individual customers with information related to the individual customers, or generating spatial relationships using data mining techniques where these spatial relationships include relative placement of products within the retail space and associations of customer paths through the retail space with product placement within the retail space. Therefore, the combination does not render Applicants' claims unpatentable.

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APPENDIX OF CLAIMS

The text of the claims involved in the appeal reads:

39.   A method for determining relationships of data associated with product placement in a

retail space, the method comprising the steps of:

generating data relationships using data mining techniques, wherein the data relationships

associate individual customers with information related to the individual customers;

generating spatial relationships using data mining techniques, wherein the spatial

relationships include relative placement of products within the retail space;

integrating the data relationships with the spatial relationships to determine additional

information concerning purchases by the customers;

wherein the spatial relationships further include associations of customer paths through

the retail space with product placement within the retail space.

41.   The method of Claim 39, wherein the spatial relationships further include associations

with customer paths through the retail space with products purchased.

42.   The method of Claim 39, wherein the spatial relationships further include associations of

product placement within the retail space with products purchased.

43.   The method of Claim 39, wherein the information related to the individual customers

includes demographic information about the individual customers gathered from a database.

44.   The method of Claim 39, wherein the additional information is determined using data

mining techniques.

53.   A data processing system for determining data relationships of data associated with

product placement in a retail space, the data processing system comprising:

first generating means for generating data relationships using data mining techniques,

wherein the data relationships associate individual customers with information related to the

individual customers;

second generating means for generating spatial relationships using data mining

techniques, wherein the spatial relationships include relative placement of products within the

retail space;

means for integrating the data relationships with the spatial relationships to determine

additional information concerning purchases by the customers;

wherein the spatial relationships further include associations of customer paths through

the retail space with product placement within the retail space.

55.   The system of Claim 53, wherein the spatial relationships further include associations

with customer paths through the retail space with products purchased.

56.   The system of Claim 53, wherein the spatial relationships further include associations of

product placement within the retail space with products purchased.

57.   The system of Claim 53, wherein the information related to the individual customers

includes demographic information about the individual customers gathered from a database.

58.   The method of Claim 53, wherein the additional information is determined using data

mining techniques.

EVIDENCE APPENDIX

There is no evidence to be presented.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings.